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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/196,574	11/20/1998	KIRAN CHALLAPALI	PHA-23.540	9299

7590 04/02/2002

CORPORATE PATENT COUNSEL
U S PHILIPS CORPORATION
580 WHITE PLAINS ROAD
TARRYTOWN, NY 10591

EXAMINER
LEE, RICHARD J

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 04/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/196,574	Applicant(s) Challapali et al
	Examiner Richard Lee	Art Unit 2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) [X] Responsive to communication(s) filed on *Jan 16, 2002* .

2a) [ ] This action is **FINAL.** 2b) [X] This action is non-final.

3) [ ] Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) [X] Claim(s) *1-16* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) [ ] Claim(s) _____ is/are allowed.

6) [X] Claim(s) *1-16* is/are rejected.

7) [ ] Claim(s) _____ is/are objected to.

8) [ ] Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) [ ] The specification is objected to by the Examiner.

10) [ ] The drawing(s) filed on _____ is/are objected to by the Examiner.

11) [ ] The proposed drawing correction filed on _____ is: a) [ ] approved b) [ ] disapproved.

12) [ ] The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) [ ] Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) [ ] All b) [ ] Some* c) [ ] None of:

1. [ ] Certified copies of the priority documents have been received.
2. [ ] Certified copies of the priority documents have been received in Application No. _____ .
3. [ ] Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) [ ] Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) [ ] Notice of References Cited (PTO-892)

16) [ ] Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) [X] Information Disclosure Statement(s) (PTO-1449) Paper No(s). *10*

18) [ ] Interview Summary (PTO-413) Paper No(s). _____

19) [ ] Notice of Informal Patent Application (PTO-152)

20) [ ] Other:

1. The request filed on January 16, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/196,574 is acceptable and a CPA has been established. An action on the CPA follows.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stenger of record (DE 3608489A1) in view of Katata et al of record (5,815,601).

Stenger discloses a method of improving image segmentation of a video telephone scene as shown in Figures 3 and 4, and substantially the same image processing device and system, method of encoding a stereo pair of images, computer executable process steps to process image data from a stereo pair of images, and apparatus for processing a stereo pair of images as claimed in claims 1-16, comprising substantially the same input which receives a stereo pair of images (see 10 of Figure 3 and 11, 12 of Figure 4); a foreground extractor (13-15 of Figure 4 and see page 4, lines 4-10 of translated article) coupled to the input which compares location of like pixel information in each image to determine which pixel information is foreground pixel information and which pixel information is background pixel information, wherein the foreground extractor computes the difference in location of like pixels in each image and selects the foreground pixels as those pixels whose difference in location falls above a threshold distance; wherein the stereo

pair of images are received from a stereo pair of cameras spaced closely from one another in a video conference system (see Figure 3); the extracting includes identifying the location of like pixels in each of the stereo pair of images, calculating the difference between the locations of like pixels, and determining for each set of like pixels whether the difference between locations falls above a threshold difference, and if so identifying those pixels as foreground information (see page 4, lines 4-10 of translated article); a memory which stores process steps (i.e., as provided to carry out functions within Figure 4), and a processor which executes the process steps stored in the memory so as to extract foreground information from the stereo pair of images, and if the difference in location is above a set threshold the pixel information is identified as foreground pixel information, if below the set threshold the pixel information is determined to be background pixel information (see page 4, lines 4-10 of translated article);

Stenger does not particularly disclose, though, the followings:

(a) a DCT block classifier coupled to the foreground extractor which determines which DCT blocks of at least one of the images contain a threshold amount of foreground information; and an encoder coupled to the DCT block classifier which encodes the DCT blocks having the threshold amount of foreground pixel information with a first level of quantization and which encodes the DCT blocks having less than the threshold amount of foreground information as background information at a second lower quantization level, the encoder encodes the foreground pixel information at a first high level of quantization and which encodes background pixel information at a second lower level of quantization, wherein the encoding step encodes the entire

8 x 8 block of DCT coefficients at the first higher quantization level if the 8 x 8 block of DCT coefficients contains the predetermined amount of foreground pixel information as claimed in claims 1, 4, 7, 8, 11, 12, and 14-16; and

(b) wherein the foreground pixel information is defined in terms of entire 8 x 8 blocks of DCT coefficients, wherein the encoding step encodes an entire 8 x 8 block of DCT coefficients as foreground information if at least a predetermined number of foreground pixels are within the 8 x 8 block, otherwise the entire 8 x 8 block of DCT coefficients is encoded as background information as claimed in claims 6 and 10.

Regarding (a) and (b), Katata et al discloses an image encoder as shown in Figure 1, and teaches the conventional use of a DCT block classifier (i.e., within 106 of Figure 1, and see column 5, lines 1-4) coupled to a foreground extractor (i.e., 101, 102 of Figure 1 and see column 4, line 45 to column 5, line 4) for determining which DCT blocks of at least one of the images contain a threshold amount of foreground information; an encoder (i.e, within 106 of Figure 1, and see column 5, lines 1-4) coupled to the DCT block classifier which encodes the DCT blocks having the threshold amount of foreground information with a first level of quantization and which encodes the DCT blocks having less than the threshold amount of foreground information as background information (i.e., background information is being provided by the threshold 15 of Figure 4 of Stenger et al) at a second lower quantization level (see column 1, lines 12-25, columns 7-8), the encoder encodes the foreground pixel information at a first high level of quantization and which encodes background pixel information at a second lower level of quantization (see column

1, lines 12-25, columns 7-8), wherein the encoding step encodes the entire 8 x 8 block of DCT coefficients at the first higher quantization level if the 8 x 8 block of DCT coefficients contains the predetermined amount of foreground pixel information (see column 1, lines 12-58, columns 7-8); wherein the foreground pixel information is defined in terms of entire 8 x 8 blocks of DCT coefficients, wherein the encoding step encodes an entire 8 x 8 block of DCT coefficients as foreground information if at least a predetermined number of foreground pixels are within the 8 x 8 block, otherwise the entire 8 x 8 block of DCT coefficients is encoded as background information (see column 1, lines 12-58, columns 7-8). Therefore, it would have been obvious to one of ordinary skill in the art, having the Stenger and Katata et al references in front of him/her and the general knowledge of stereo image processings within videophone environments, would have had no difficulty in providing the DCT block classifier and an encoder for providing different quantization level processings for foreground and background image data as taught by Katata et al for the stereo image videophone system within Stenger for the same well known image compressions purposes as claimed.

Regarding the applicants' arguments at pages 3-4 of the amendment filed January 7, 2002 concerning in general that "... as the disclosure by Stenger only transmits the foreground information in order to conserve bandwidth, and does not transmit background information after an initial transmission where the background is stored in memory, it is respectfully submitted that a person of ordinary skill in the art would not have found motivation, suggestion or teachings by the combination of Stenger and Katata even to combine the teachings of the references, let alone

obviate instant claims 1-16 ...", the Examiner respectfully disagrees. It is disagreed that Stenger only transmits foreground information and does not transmit background information after an initial transmission where the background is stored in memory. Stenger teaches at page 4, last paragraph that once the background data are transmitted, they are stored in a background memory and when they become visible again in the course of the telephone conversation they are taken from this memory. It seems from this passage of Stenger that after the background data is transmitted, the background data is stored in the memory awaiting further transmissions from time to time. In any event, whether the background data of Stenger is transmitted only once and/or Stenger only transmits foreground information, the critical issue at hand is that Stenger nevertheless teaches a threshold process (i.e., 15 of Figure 4 of Stenger) for discriminating foreground and background data informations (see page 4, lines 4-10 of Stenger). And, it is again submitted that it is considered obvious to provide the DCT block classifier and an encoder for providing different quantization level processings for foreground and background image data as taught by Katata et al for the stereo image videophone system of Stenger.

Regarding the applicants' arguments at pages 4-6 of the amendment filed January 7, 2002 concerning in general that "... in the presently claimed invention the defined foreground information is based on a block of DCT data, rather than the precise boundary of the video conference participant. The need to accurately represent the contour of the participant is avoided by the DCT blocks ... It is respectfully also submitted that Katata teaches away from the presently claimed invention because the reference is concerned with accurately representing the contour of

the video conference ...", the Examiner wants to point out that though Katata may teach shape and position encodings, it is still nevertheless that Katata teaches substantially the same if not the same DCT block classifier (i.e., within 106 of Figure 1) that is coupled to a foreground extractor (i.e., 101, 102 of Figure 1) for determining which DCT blocks of at least one of the images contain a threshold amount of foreground information (see column 4, line 45 to column 5, line 4), and that such features of Katata et al may be provided for the stereo image videophone system within Stenger for reasons above.

4. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry) (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group customer service whose telephone number is (703) 306-0377.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

3/27/02